THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 18

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte HUI HU

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Appeal No. 96-0659
Application 08/081,040[1]

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ON BRIEF

_____

Before URYNOWICZ, JERRY SMITH, and BARRETT, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-5, which constitute all the claims in the application. An amendment after final rejection was filed on December 16, 1994, but was denied entry by the examiner.

The disclosed invention pertains to a computed tomography imaging system in which

[1] Application for patent filed June 22,1993.

a source of radiation emanating in a cone beam from a source is acquired by a two-dimensional array of detector elements. The cone beam data is filtered and backprojected to produce first image data. Second image data is produced by estimating data missing from the cone beam data. The final image data is obtained by combining the first and second image data.

Representative claim 1 is reproduced as follows:

1. A computed tomography imaging system which comprises:

a two-dimensional array of detector elements for receiving photons emanating in a cone beam from a source;

a digital acquisition system for acquiring two-dimensional arrays of cone beam data from the array of detector elements at a series of views in which the array of detector elements revolves around a central axis;

a filter for receiving the cone beam data and filtering the same;

means for back projecting the filtered cone beam data to produce image data $f_D(\mathbb{P})$;

means for receiving the cone beam data and estimating values not provided by the received cone beam data;

means for receiving the estimated values and calculating corrected image data $f_c(\mathbb{P})$; and

summing means for combining the image data $f_D(\mathbb{P})$ with the correction image data $f_c(\mathbb{P})$ to produce an image slice.

The examiner relies on the following references:

Tam (Tam ’183)	5,257,183	Oct. 26, 1993 (filed Dec. 21, 1990)
Tam (Tam ’926)	5,270,926	Dec. 14, 1993 (filed Dec. 21, 1990)

Claims 1, 2, 4 and 5 stand rejected under 35 U.S.C. § 102(e) as being anticipated by the disclosure of Tam ’926. Claim 3 is rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Tam ’926 in view of Tam ’183.

Rather than repeat the arguments of appellant or the examiner, we make reference to the briefs and the answers for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of anticipation and obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellant’s arguments set forth in the briefs along with the examiner’s rationale in support of the rejections and arguments in rebuttal set forth in the examiner’s answers.

It is our view, after consideration of the record before us, that the disclosure of Tam ’926 does fully meet the invention as recited in claims 1, 2, 4 and 5. We are also of the view that the evidence relied upon and the level of skill in the particular art would have

suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claim 3. Accordingly, we affirm.

We consider first the rejection of claims 1, 2, 4 and 5 under 35 U.S.C. § 102(e) as being anticipated by the disclosure of Tam '926. Claims 1, 4 and 5 stand together as one group of claims, and claim 2 stands separately [brief, page 6]. Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

With respect to independent claim 1, the examiner has indicated how he reads claim 1 on the disclosure of Tam '926 [answer, pages 3-4]. Appellant responds that the last three elements of claim 1 are not disclosed by Tam '926 [brief, pages 8-10]. We agree with the examiner for reasons which will become clear below.

With respect to the means for estimating values recited in claim 1, appellant argues that Tam '926 has such a means, but it does not use the cone beam data to make this estimate. Appellant asserts that Tam '926 performs an iterative process using known prior

information and does not use cone beam data in a one-step process [brief, page 10]. The examiner responds that claim 1 does not recite that the estimated values are calculated from the cone beam data. We agree with the examiner that appellant's argument is not commensurate in scope with claim 1.

Claim 1 recites a means for receiving cone beam data and "estimating values not provided by the cone beam data." This recitation does not require that the estimates come from the cone beam data. Appellant attempted to insert the word "therefrom" after estimating in this clause, but such amendment was denied entry after final because it raised new issues. We would certainly agree that the word "therefrom" inserted at the intended location would remove Tam '926 as an anticipatory reference. Appellant, however, is asking that the claim be interpreted as if the amendment had been entered. We decline to implicitly read limitations into the claim when the limitations could have been explicitly added so easily.

Appellant also argues that Tam '926 "does not disclose any means 'for calculating corrected image data $f_C(P)$' from the 'estimated values' as recited in claim 1" [brief, page 10]. It is critical that the underlined word in appellant's argument does not appear in claim 1. Appellant is again asking that the claim be interpreted not as literally drafted but in accordance with the disclosure of the invention. We again agree with the examiner that limitations should not be read into the claim.

Appellant's argument that Tam '926 does not disclose the calculation of corrected image data nor a "summing means" as recited in claim 1 is also not agreed with. The loop involving block 72 in Figure 9 of Tam '926 clearly calculates corrected data which is summed with the cone beam data in block 62.

Appellant argues that the "means" elements of claim 1 have not been properly interpreted in accordance with the sixth paragraph of 35 U.S.C. § 112 [reply brief]. Appellant points to the methodology shown in Figure 5 of the application as the means of claim 1, and appellant argues that the methodology shown therein is not performed by the Tam '926 device. Under the facts of this case, we agree with the examiner that his interpretation of the recitations of claim 1 is consistent with the statute and with case law developed on this topic.

The statute requires that a means in a claim "shall be construed to cover the corresponding structure ... described in the specification and equivalents thereof." The structure which appellant has disclosed that carries out all the functions shown in Figure 5 is a box numbered 25 in Figure 2 and labeled "Image Reconstructor." This box is apparently some form of computation device such as a calculator or computer. The functions in Tam '926 are also implemented by a box numbered 100 in Figure 12 and labeled "Processor." Appellant has not pointed to anything in the application disclosure or in the Tam '926 disclosure which would support the position that the processor of Tam

'926 does not broadly structurally anticipate the image reconstructor of the disclosed invention.

Appellant's reliance on Figure 5 of the application points to a functional difference between the disclosed invention and the Tam '926 disclosure. As noted above with respect to claim interpretation, however, appellant reads a functional limitation into claim 1 which is not commensurate in scope with the literal language of claim 1. The sixth paragraph of 35 U.S.C. § 112 was not intended to permit an applicant to read disclosed functional language into the claim which is not of the same scope as the claimed function. Thus, the only structure necessary to meet the functions of claim 1 is an image reconstructor as shown in appellant's Figure 2. The processor 100 of Tam '926 structurally satisfies the disclosed image reconstructor and performs all the functions as recited in claim 1. Therefore, appellant has failed to demonstrate that 35 U.S.C. § 112 requires a claim interpretation that is inconsistent with the examiner's interpretation of the claim.

Finally, appellant has submitted a declaration by Tam. The Tam declaration does nothing more than support the position that the invention disclosed by Tam is not the same as the invention disclosed in the application. We agree with the examiner that this is not the issue to be resolved. The question is one of claim interpretation. Claim interpretation is a matter of law, and Mr. Tam is not qualified to determine the scope of the claimed

invention. Thus, we agree with the examiner that the Tam declaration fails to provide evidence that the rejection under 35 U.S.C. § 102 was legally incorrect.

For all the reasons discussed above, we sustain the rejection of claim 1 under 35 U.S.C. § 102 and of claims 4 and 5 which are grouped therewith.

Claim 2 depends from claim 1 and is argued separately by appellant. Claim 2 recites that the missing data is estimated using a means for interpolating. Appellant argues that there is no suggestion in Tam '926 of calculating missing data by interpolating between the boundaries of acquired cone beam data as recited in claim 2 [brief, page 11]. The examiner argues that the act of estimating missing data in Tam '926 and inserting this missing data between the acquired cone beam data is an interpolation as claimed [answer, page 9].

We agree with the examiner. Claim 2 does not recite what values form the basis for the interpolation. Claim 2 simply recites that an interpolation serves to provide the estimated values between the acquired cone beam data. We agree with the examiner that the estimation of values disclosed in Tam '926 broadly meets the claimed recitation that an interpolation occurs. To fill in gaps within known data is broadly considered to be an interpolation within the meaning of that term. Appellant's arguments with respect to claim interpretation fail here for the same reasons discussed above with respect to the "means"

of claim 1. Therefore, we also sustain the rejection of claim 2 under 35 U.S.C. § 102.

We now consider the rejection of claim 3 under 35 U.S.C. § 103 as unpatentable over Tam '926 and Tam '183. Claim 3 depends from claim 1 and recites that the cone beam data is weighted prior to its application to the filter. The examiner cites Tam '183 as specifically teaching the weighting of cone beam data prior to filtering. Since both Tam patents are directed to the same subject matter, the examiner explains that it would have been obvious to the artisan to weight the cone beam data in Tam '926 in the manner suggested by Tam '183 [answer, pages 5-6]. Appellant's only argument with respect to this rejection is that claim 3 is patentable for the same reasons as claim 1 [brief, pages 11-12]. Since we have previously determined that the arguments with respect to claim 1 are not persuasive of error by the examiner, and since appellant makes no additional arguments with respect to claim 3, we sustain the rejection of claim 3 under 35 U.S.C. § 103.

In summary, we have sustained both of the examiner's rejections of the claims. Therefore, the decision of the examiner rejecting claims 1-5 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

STANLEY M. URYNOWICZ JR.	)	
Administrative Patent Judge	)	
	)	
	)	
	)	BOARD OF PATENT
JERRY SMITH	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
LEE E. BARRETT	)	
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